Ontario Hydro

We must not neglect
the proven in the search
for the possible.

1983 Annual Report

The Corporation

Ontario Hydro is a corporation without share capital created by a special statute of the Province of Ontario in 1906. It now operates under the authority of the Power Corporation Act, R.S.O. 1980, Chapter 384, as amended, with broad powers to generate, supply and deliver electric power throughout the province. It is also authorized to produce and sell steam and hot water as primary products. The Corporation's prime objective is to supply the people of Ontario with electricity at the lowest feasible cost consistent with high safety and quality of service standards.

Ontario Hydro's main activity is wholesaling electric power to municipal utilities in urban areas, who in turn retail it to customers in their service areas. Ontario Hydro also serves directly more than 100 large industrial customers and about 768,500 rural retail customers in areas or communities not served by municipal utilities. In 1983, approximately 3,048,000 customers were served by Ontario Hydro and the municipal utilities in the province.

Ontario Hydro operates 79 hydraulic, fossil and nuclear generating stations and an extensive power grid across Ontario to meet the province's demands for electric energy. Interconnections with other systems place the Corporation in an extensive electrical grid that covers a large segment of the North American continent.

In addition, Ontario Hydro exercises certain regulatory functions over municipal utilities and also exercises the approval and inspection functions for electrical equipment (in conjunction with the Canadian Standards Association) and electrical wiring installations throughout the province.

Ontario Hydro is a financially self-sustaining corporation. The Province of Ontario guarantees bonds and notes issued to the public by the Corporation.

Ontario Hydro's head office is located at 700 University Avenue, Toronto, Ontario. For administrative and operational purposes, six regional and 53 area offices are maintained throughout the province.

The business and affairs of Ontario Hydro are directed and controlled by a board of directors consisting of a chairman, a president, a vice-chairman, and not more than 10 other directors. All of the members of the board are appointed by the Lieutenant-Governor in Council of the province except the president who is a full-time employee of the Corporation appointed by the Board.

To assist the Board in directing the Corporation's affairs, there are five Committees of the Board – Finance, Audit, Management Resources, Social Responsibility, and Technical Advisory. These committees review and make recommendations to the Board on matters within their terms of reference.

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Report of the Board of Directors of Ontario Hydro for the Year 1983

To:
The Honourable Philip Andrewes,
Minister of Energy

We, the Board of Directors, submit to you this report of the financial position and relevant Ontario Hydro activities for the year 1983. We would like to thank you and the staff of the Ministry of Energy for the cooperation and understanding extended during the year.

On behalf of the Board

Milan Nastich

Milan Nastich
May, 1984

Financial Highlights

	1983	1982
	(in thousands of dollars)	
Revenues	**3,805,131**	3,387,630
Net income	**471,651**	348,419
Total assets	**23,193,894**	20,720,832
Net additions to fixed assets	**2,709,542**	2,883,039

Message from the Chairman

For Ontario, 1983 was a year in which economic uncertainty gradually gave way to cautious optimism. It was a year in which the people of Ontario showed their resilience and capacity to adjust to new and more difficult circumstances.

In that vein, Ontario Hydro also redirected its resources to improve its ability to respond to those rapidly changing economic circumstances. Costs were cut, programs adjusted and policies changed to keep rates at the lowest level over the long term – without jeopardizing customer service.

Our key to more flexibility involves making the best use of Hydro facilities – existing generating capacity, nuclear stations under construction, existing and future transmission facilities and upgraded interconnections with neighbouring utilities.

For power consumers, the benefits will be a more efficient and more customer-oriented utility which will cut costs without cutting standards, and thus provide Ontario with competitively priced and reliable electricity.

We are well aware of our responsibilities to the people of Ontario. For more than 77 years, Ontario Hydro has taken those responsibilities seriously and, in so doing, earned a reputation for high quality service and impressive technological achievement. That pursuit of excellence remains an integral part of the motivation of Hydro's dedicated and resourceful staff.

The year 1983 was also one of unexpected challenges. During the summer, the rupture of a pressure tube in one of the units at the Pickering generating station heightened public interest in Ontario Hydro's nuclear program.

This incident demonstrated the ability of the CANDU design to sustain safely a major component failure. When the unit was taken out of service, the higher cost of replacement power from our coal-fired stations underlined just how economic nuclear power is.

Nuclear power will continue to play a major part in the development of an economic power system that provides reliable electricity at lowest possible cost. But there are also important roles for coal, water, and alternative technologies. By drawing on a variety of energy sources, an economic and environmentally sound electricity system will be maintained.

At this time, I would like to thank Hugh Macaulay, who resigned March 31, 1983, and whose guidance and assistance helped the Corporation position itself to meet the future needs of the province.

I would also like to thank the Board of Directors and senior management – in particular, Senior Executive Vice-President Pat Campbell and Executive Vice-President, Operations, Arvo Niitenberg – for their help.

And finally, on behalf of Hydro, I would like to express my appreciation to the three associations that represent a large segment of our customers – the Ontario Municipal Electric Association, the Association of Municipal Electrical Utilities, and the Association of Major Power Consumers in Ontario. Their cooperation is reflected in their dedicated service to the people of Ontario.

Milan Nastich

Q. Late in 1982 Hydro announced a new corporate strategy which shifts priorities from expanding the system through construction to maximizing use of existing resources. What did that strategy accomplish in 1983?

A. The first and major accomplishment has been the setting of a new corporate direction. Clarity of mission is one of the most important needs in an organization the size of Ontario Hydro, and the new corporate strategy gives us that. It tells the people of Ontario, our owners, what to expect from their utility.

I think it's safe to say that, in the past, we focused on meeting the demand for electricity, mainly by increasing the supply. Now we're focusing our efforts on managing both demand and supply to achieve the lowest possible price for electricity. On the marketing side, we're looking at encouraging new energy efficient electricity applications that benefit the consumer and support federal and provincial off-oil policies. It's entirely possible that in our marketing activities in the 1990s we'll want to place even greater emphasis on load management and energy efficiency. This will help balance customer needs and system capabilities and bring the maximum economic benefit to our customers. On the supply side, of course, we will complete the current construction program as expeditiously and as economically as possible.

Q. Once you have the new generation in place, will you have the power system you need?

A. Not completely. We'll have enough generation facilities in place – at least through the 1990s – but that's only part of the story. What we need is added transmission. We have to get the power from where it's made to where it will be used. The major transmission projects in eastern and southwestern Ontario are designed to do just that. We're in the midst of that process now, working with people in those parts of the province, and with the Joint Hearings Board which will decide the location of the lines. And once the bulk transmission is in place, there will have to be continuing efforts to build up the distribution system in Ontario to maintain a reliable supply of electricity to our customers.

Q. Most North American utilities find themselves with surplus capacity due to forecasts that turned out to be too high. Can you do better in future?

A. Forecasting methods will improve, but can never insulate us entirely from unexpected events. In the past, utilities generally chose the lowest-cost option, which usually meant building large generating stations that provide a low unit cost. But the risk is that if forecasts of demand turn out to be too optimistic, then the electricity facilities will not be used initially to full capacity. Our new approach is, first, to try to be ready to meet a range of possibilities and, second, to add smaller increments of capacity. While it may be somewhat more costly, this new approach results in more effective responses to changing circumstances. Flexibility and quickness of response have to be two of our major aims for the balance of this century.

Q. If minimizing costs is a key part of your new approach, are Hydro's customers going to notice any decline in service or reliability?

A. I believe not. I have a great deal of faith in Hydro people. They can put their intelligence and inventiveness to work in making optimum use of available resources, and thus provide the same excellent service as they have in the past.

Q. Does the failure of a pressure tube in 1983 at the Pickering nuclear generating station mean Hydro should rethink the economics of the nuclear option? Is the construction of the Darlington nuclear station, scheduled to be in service by 1992, still a sound proposition?

A. The pressure tube problem at Pickering doesn't alter the relative economic advantage of Ontario's nuclear plants compared to the next feasible alternative – coal-fired plants. The pressure tubes were scheduled to be replaced sometime during the life of the reactor – now the replacement will

have to happen sooner than we'd earlier thought. In any event, what is learned at Pickering will be applied to Darlington. Our forecasts show that Darlington remains a good bet for all but the most pessimistic scenario, which assumes virtually no growth at all for the next 15 years. So, for a wide range of realistic probabilities, Darlington remains an economic investment for the people of Ontario.

Q. Hydro's debt has attracted the attention of critics in 1983. Is this debt of $20 billion too high?

A. Our debt certainly attracted attention. I wish our assets of $23 billion had attracted as much. Hydro has not overextended itself. Debt, in itself, is neither good nor bad. Electrical utilities are, by and large, debt-financed, because of the large capital cost of new facilities. The underlying principle is that the customers who'll use the new facilities when they come into service some 15 years later are also the people who should pay for them. In fact, Hydro's financial soundness will be improving as we finish off our construction program. Our debt ratio is rapidly approaching the targets that we've set, and in 10 years our debt will be, in today's dollars, about $15 billion – significantly lower than today. Our debt is an investment in the future, in a power system which will produce electricity and revenues for 50 to 60 years.

Q. How well did Hydro relate to its customers in 1983?

A. My reading is that the people in Ontario generally feel electricity is a good buy. On the customer reliability side, which is very important to people, we've had a good year. People have been able to turn their light switches on when they wanted. Most of our major customers are aware that electricity helps give them a competitive edge. It's reliable and relatively cheap. I think our customers also realize we are working hard on their behalf to keep it that way.

Our relationship with our major customers, through the OMEA, AMEU and AMPCO, improved this year. That's important because, as you know, Ontario has a rather unusual electrical utility network. Hydro sells most of its power to local municipal utilities, so that most end users of electricity are not our direct customers. We want to work even more closely with these associations, as well as with groups such as electrical manufacturers and contractors, to ensure that we provide the service that our customers need and want.

Q. Other Canadian utilities, like Hydro-Quebec, are seeking to increase power exports to the United States. Will Ontario Hydro continue to compete for these markets as well?

A. We certainly will. The pursuit of export markets is an important part of our corporate strategy, because it is of great benefit to all concerned. The income from export sales in 1983, for instance, reduced Ontario electricity rates by close to 5 per cent. Furthermore, it helped improve Canada's balance of payments position.

Exports of Ontario-manufactured electricity also benefit American customers by helping to moderate their electricity rates. Furthermore, by building the interconnections needed for selling power, we are increasing the reliability of electricity supply on both sides of the border by strengthening our ability to buy and sell power in emergency situations.

Q. Your predecessor, Hugh Macaulay, said last year that the toughest challenge for Hydro in the mid-1980s would be keeping the price of electricity down. With revenues up in 1983, has that challenge been largely met?

A. No. That challenge will stay with us through the '80s. It's definitely not a one-year effort. While there are unknowns facing us, our assessment of the most likely future is that electricity prices will remain competitive. But it requires effort, dedication and ingenuity.

Over the last 10 years, the Canadian and Ontario economies have been volatile, in large degree due to the unsteady nature of U.S. and world economies and to unpredictable changes in world oil prices. Real growth in Canada's gross national product has been uneven since 1973, with rather severe cycles of slumps followed by recovery.

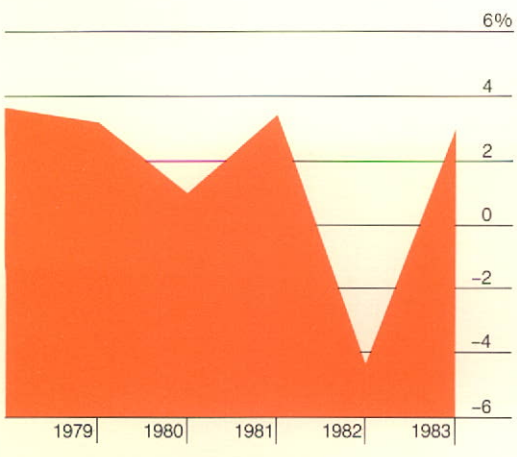
Rapid and severe changes in growth patterns pose problems for electrical utilities whose generating stations need lead times of 15 years or more from planning stage to completion. The difference over 20 years between a slow growth and fast growth scenario can have a dramatic impact on the demand for electricity, and the capacity a utility needs to meet that demand.

The turnaround in the economy in 1983 suggests that economic swings are still with us and that long-term planning will require a large degree of flexibility. The severe recession of 1981-82, which resulted in a slight decline in Ontario's electricity demand in 1982, was followed by recovery during 1983.

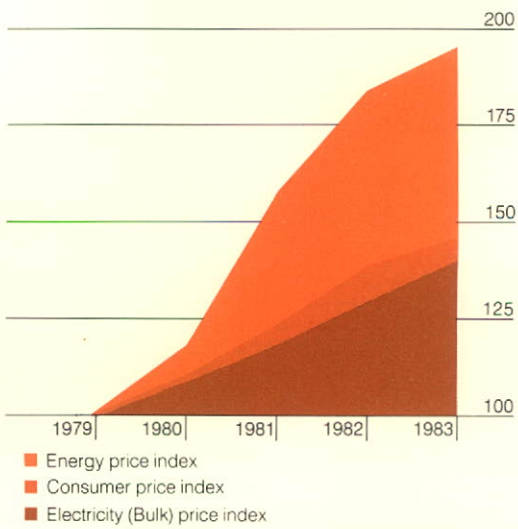
This recovery was led by increases in consumer spending as lower interest rates and some governmental policies encouraged consumers to spend some of their accumulated savings. As they did so, the improving economy further bolstered consumer confidence and helped to promote consumer spending generally. In response to increased demand for consumer goods and services, businesses began to fill new orders by increasing production and rehiring workers.

Despite this consumer-led recovery, manufacturing industries' utilization rates are still low, around 70 per cent. Most industries can easily increase production without adding to their existing capacity. Economic forecasts suggest that businesses won't have to start adding new plant and equipment until 1985. When that happens, Ontario industries that produce capital goods are expected to raise production to meet increasing demand.

The increased demand for customer goods, and particularly industrial expansion, will mean heavier demand for electrical power.



Economic Growth: Canada
Real Gross National Product
Annual Average Percent Change



Price Change Comparison in Ontario
(1979 = 100)

Record energy, peak demand

The year 1983 marked a real turnaround for Ontario Hydro. As the province climbed out of a severe recession, which brought an actual drop in primary electrical energy demand of 0.8 per cent in 1982, records were set in electricity demand during 1983.

A mild winter and a weak economy during the first four months of 1983 gave way to a hot summer, stronger industrial activity and extremes of cold in the last month of the year. These circumstances, coupled with weak demand in the corresponding period in 1982, contributed to a year-to-year average growth in primary energy demand of about 11 per cent for the May to December period.

Over the whole year, Ontario Hydro satisfied an all-time high of 106.1 billion kilowatt-hours in provincial primary energy demand – 5.2 per cent more than in 1982.

The year's primary peak demand of 18.8 million kilowatts on December 21 was also a record, surpassing 1982's peak, set on January 18 of that year.

In 1983, Hydro delivered a total of 118.0 billion kilowatt-hours of electricity to the bulk electricity system, of which 94 per cent was generated from its own resources. Purchased energy, including Douglas Point's production of 1.2 billion kilowatt-hours, provided the balance.

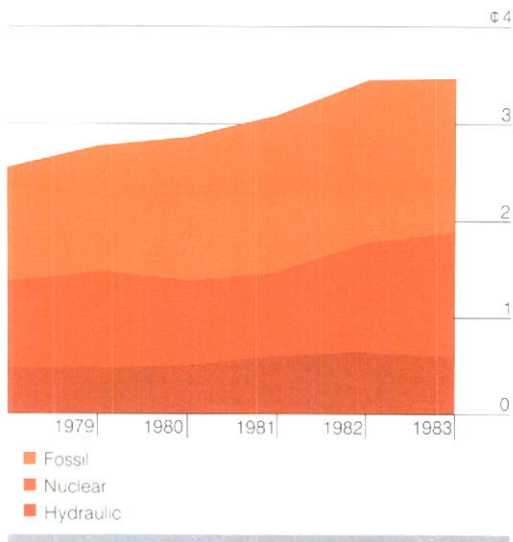
Hydro's CANDU nuclear units supplied 38.3 billion kilowatt-hours, a 10 per cent increase over 1982. This represents 32.5 per cent of total energy generated and purchased, and reflects the additional nuclear production provided by unit 5 at Pickering B which came into service in May.

Hydro-electric production also experienced a year-to-year increase, up 6.1 per cent to 36.6 billion kilowatt-hours – or 31 per cent of total energy made available. Above-normal water flows, which prevailed on some major rivers during the first half of the year, were the primary reason for this increased output.

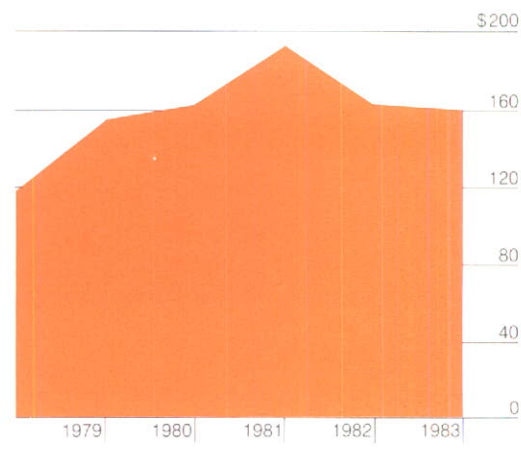
The rate of fossil-fired generation fluctuated considerably during the year, from a low in June to a record high in December. This reflected extreme winter and summer weather conditions, unavailability of some nuclear units, and wide variations in industrial loads. Coal-fired units provided virtually all of the 35.8 billion kilowatt-hours of fossil generation and accounted for 30.4 per cent of the electricity supplied for Ontario Hydro customers during the year.

Exports earn income as purchases reduce costs

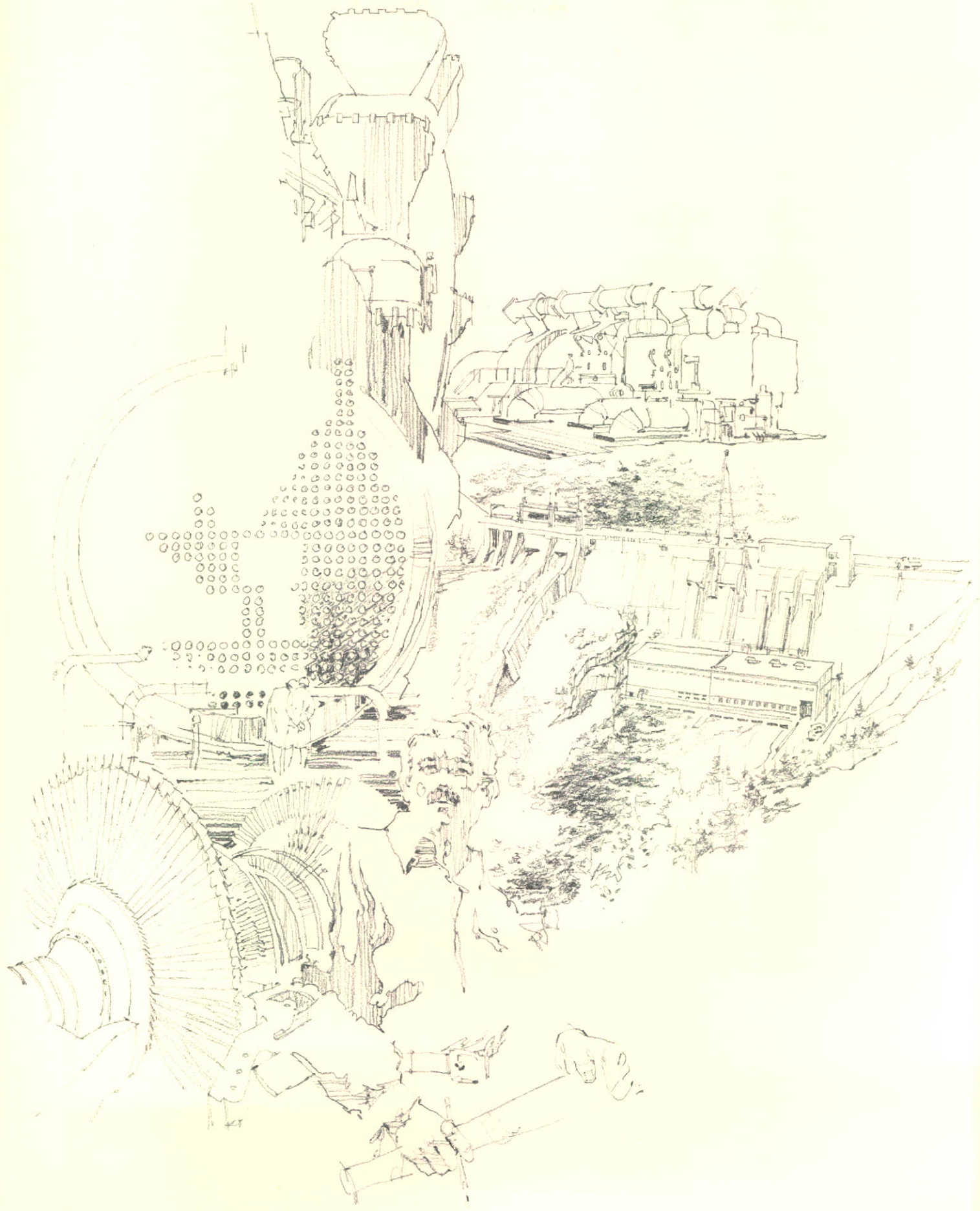
The Corporation's earnings from an unprecedented volume of export business in 1983 benefitted Ontario consumers. Hydro earned an income of $159.8 million from the sale of 11.9 billion kilowatt-hours of electricity to utilities in New York, Michigan, Ohio and Vermont. As in previous years, these export sales produced a two-fold economic advantage: they not only



Average Cost of Generation
(In cents per kilowatt-hour of energy generated)



Income from Export Sales
$ Millions



lowered the cost of electricity within the province, but they also improved Canada's balance of payments with the United States. In 1983, Hydro's income from power exports reduced the cost of providing electricity to Ontario consumers by almost 5 per cent.

At the same time, excluding Douglas Point's production, Ontario Hydro purchased 5.8 billion kilowatt-hours of electricity from other utilities, primarily from Quebec and Manitoba, at a cost of approximately $96 million. Purchasing, rather than generating, this power netted savings to Hydro's customers of approximately $20 million.

A responsibility to prepare for the future

Ontario Hydro is continuing its efforts to match resources as closely as possible with the province's need for electricity. These efforts have led Hydro to scale down its generating construction program considerably since the mid-1970s when the forecasts called for 7 per cent annual load growth. Since 1975, more than 12 million kilowatts of planned generating capacity has been cancelled – the equivalent of three Darlington stations.

Based on the latest long-term forecast of 2.4 per cent average annual growth, the current expansion program will add almost 8.2 million kilowatts of capacity, primarily nuclear, by 1992. By that time, nuclear energy is expected to provide almost two-thirds of the province's electricity.

The first nuclear unit at the Pickering B station went into commercial service during 1983. Two Pickering B units and the single-unit lignite-fired Atikokan station are scheduled to go into service during 1984.

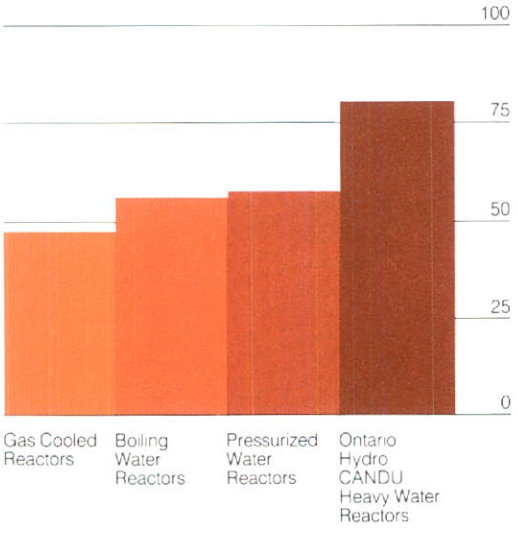
Meanwhile, construction continued at the site of the four-unit Darlington nuclear generating station, which is expected to be placed in service between 1988 and 1992. At year's end, almost 3,000 workers were employed on that project.

Hydro reduces dependence on fossil fuels

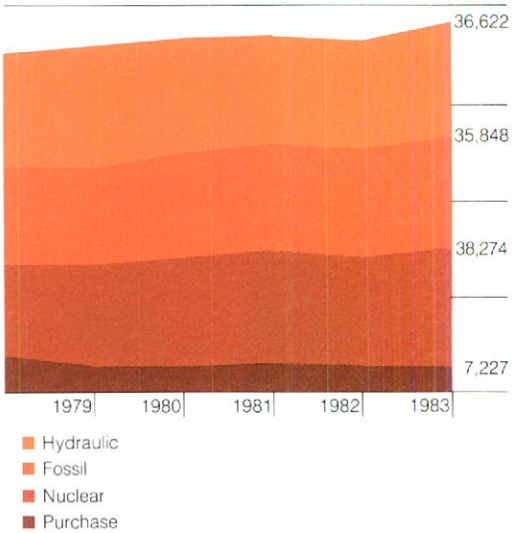
Lower than expected load growth, environmental considerations, and the need to keep overall costs of operating the power system as low as possible have all prompted Hydro to lessen its dependence on its older fossil-fired generating stations. As in the previous three years, more coal-fired units were either completely taken out of service or placed in a condition which permits restart within weeks if required.

Accordingly, after providing more than 30 years of reliable electrical service, the partially closed Richard L. Hearn station was taken out of service pending a review of its future. Also closed during the year were two units at the 30-year-old J. Clark Keith Generating Station.

In 1983, coal-fired plants continued to be an important source of power for meeting peak loads during periods of heavy demand. Actual coal burned in 1983 to generate 32.4 per cent of Hydro's electricity production totalled 12.9 million megagrams.



World Nuclear Power Reactor Lifetime Performance
Gross Capacity Factor (%)



Energy Made Available
Millions of kW.h

Economics favour nuclear

The performance of Hydro's CANDU reactors in 1983 demonstrated nuclear power's economic advantages over coal for meeting the province's base load generation requirements.

Ontario Hydro's total cost of generating one kilowatt-hour of electricity from nuclear stations averaged 1.87 cents in 1983 compared to 3.45 cents for electricity from fossil stations.

Forecasts of unit energy costs continue to favour the economics of nuclear over coal. These costs include operation, maintenance, administration, fuel, depreciation and financing charges. In arriving at these costs, Hydro takes into account the historical accounting costs of operating facilities and the actual energy generated by these facilities during the year.

Providing electricity at a cost of 0.58 cents per kilowatt-hour in 1983, the Corporation's 68 hydro-electric generating stations remained the least expensive of Hydro's generation.

Hydro's nine CANDU reactors completed another year of outstanding productivity in 1983. Four of them ranked in the top 10 in a world-wide comparison of more than 160 operating reactors of similar size.

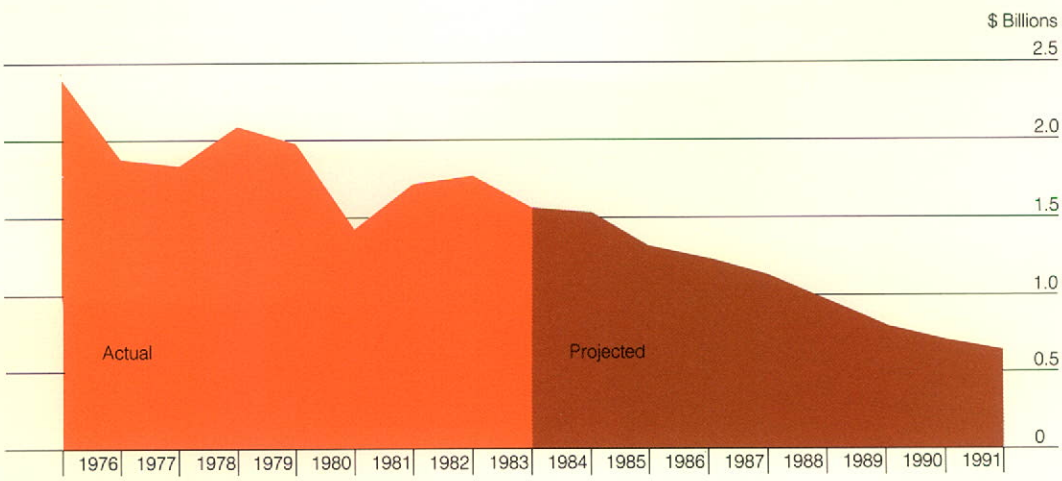
On a lifetime basis, Bruce unit 3 holds the distinction of first place in this comparison, while Bruce unit 4 occupies second position on a lifetime basis as well as for 1983.

Pickering unit 5 experienced a successful initial operating period, reporting an average capacity factor of 92 per cent during its first eight months of service.

Bruce A achieved outstanding performance in 1983 with a station capacity factor of 90.1 per cent – that is, the four units were running and producing power more than 90 per cent of the time throughout 1983. Despite the pressure tube problems at units 1 and 2, Pickering A achieved a capacity factor of 76.2 per cent.

Corporate purchases declining

The downward trend in capital construction activity meant that Hydro spent about 29 per cent less in 1983 than 1982 on equipment, materials, and services. Canadian sources received 85 per cent of the $550 million Hydro spent on equipment, materials and services in 1983, and 90 per cent of Canadian purchases were made in Ontario. In addition, Hydro spent almost $907 million on primary fuels, 79 per cent for fossil fuels and the balance for nuclear. Those expenditures represent a reduction of more than 13 per cent from 1982 fuel costs.



1976-1991 Construction Activity
In Constant 1983 Dollars
(Excluding interest capitalized and future use heavy water)

The year 1983 saw completion of a number of transmission line projects, including a new double-circuit 345,000-volt interconnection with the Power Authority of the State of New York. This project improves system security and increases power exchange capability with New York state. In the northwest part of the province, a new 230,000-volt transmission line, stretching from Marmion Lake to the MacKenzie transformer station, will tie in Atikokan generating station when it comes into service in 1984.

Responsible planning for the future

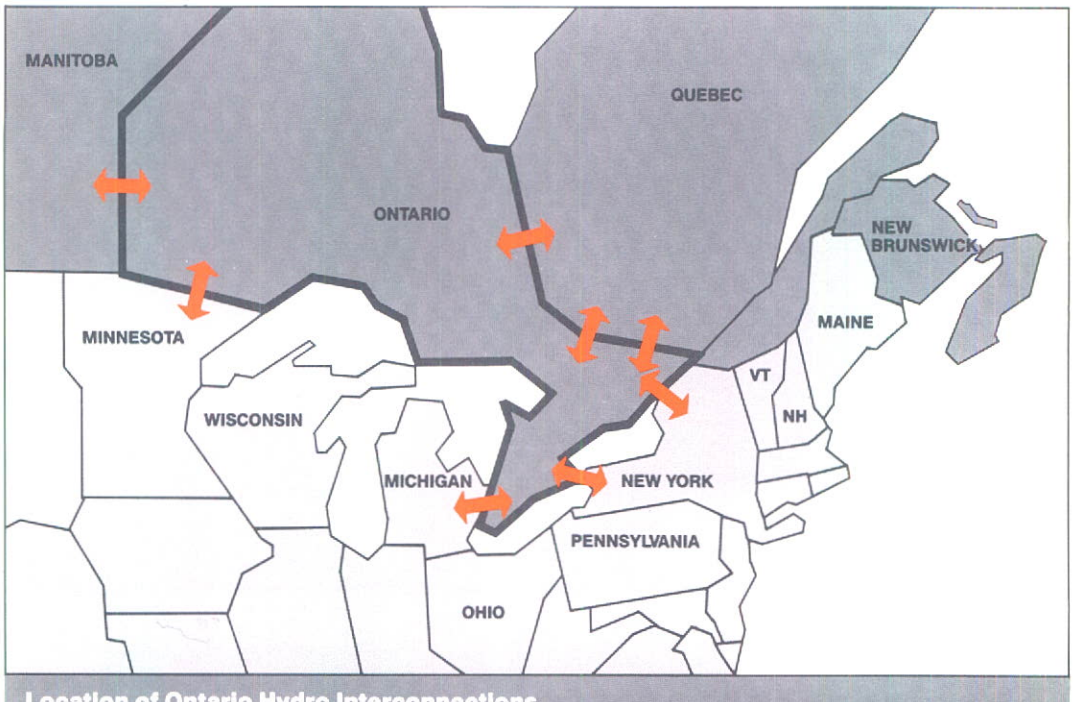
Ontario Hydro is a leader in building public participation programs into system expansion planning. In 1983, it completed another phase in the largest such project ever undertaken by a Canadian utility. This lengthy study, underway since 1980, involves finding suitable locations for transmission lines in southwestern Ontario and a transformer station in the London area. Public involvement in this phase of the project culminated on December 1, 1983 with the submission of a Route Stage Environmental Assessment to the Minister of the Environment for government and public review.

By year's end, the Joint Board, constituted under the Consolidated Hearings Act, had scheduled preliminary hearings for February, 1984, prior to conducting a full public inquiry into Hydro's route stage proposal.

A similar major transmission study is in progress in eastern Ontario. Transmission facilities are needed to meet the growing demand for electricity, particularly in the Ottawa area, and to strengthen Hydro's interconnection with Hydro-Quebec. By year's end, alternative routes for two new 500-kilovolt lines between Kingston and Ottawa had been identified.

Hydro is applying to the Joint Board to amend the eastern Ontario study by separating the interconnection with Hydro-Quebec from the facilities required for the supply of Ontario Hydro customers. This is being done to avoid additional delays in transmission facilities required to reliably supply the rapidly growing loads in the Ottawa area.

Public hearings on the supply to the Ottawa area are expected to begin early in 1985 following Hydro's submission of a Route Stage Environmental Assessment.



Location of Ontario Hydro Interconnections

Owen Sound TS
Essa TS
Lake Simcoe
Bruce GS 'A'
Bruce GS 'B'
Hanover TS
Orangeville TS
Seaforth TS
Datweiler TS
Lake Huron
Orchard TS

Improving air and water quality

With the conversion of a second Nanticoke generating unit to low nitrogen oxide (NO_x) burners, Hydro was able to reduce its NO_x emissions. Each unit equipped with low-NO_x burners cuts down its nitrogen oxide emissions by 25 per cent. All eight units at this station will be retrofitted with these burners in the future.

Because two nuclear units were out of service for several months and increase in demand was higher than expected, Hydro had to depend more heavily on its coal plants in 1983 than planned. Consequently, it was unable to reduce sulphur dioxide emissions as expected. This, however, will not affect Hydro's commitment to cut total acid gas emissions to 450,000 tonnes by 1986 and, ultimately, to 300,000 tonnes by the end of the decade.

In cooperation with other organizations such as the Canadian Electrical Association, Ontario Hydro participated during the year in acid rain studies and research. The purpose is to evaluate the effects of acid rain on the environment, and to identify the atmospheric process by which sulphur and nitrogen oxides are converted into acid rain. These research activities should help develop economic and effective ways to control acid rain across North America.

In addition to acid rain research, Ontario Hydro continued with environmental monitoring programs. These programs, which generally monitor the aquatic, atmospheric, and terrestrial environments, are started before the construction of all major Ontario Hydro projects and continue for several years into the operation phase. The purpose is to verify previous predictions of environmental effects and to identify any significant environmental impacts which require action.

Among other environmental activities, the Mississagi River Bank Stabilization Project exemplifies initiatives which Ontario Hydro undertakes to protect natural resources. Work on the river slope stabilization project, downstream from the Red Rock Falls generating station, progressed during the year and is scheduled to conclude in 1985.

Also in 1983, Hydro reached a milestone in its research, design and development efforts for securing improved cooling systems at thermal stations. The adoption of a flat slotted intake design for Darlington will considerably reduce the entrapment of fish into the station's cooling system.

A proud record of safety in the nuclear workplace

The high level of performance that has been achieved in employee and public radiological safety in the nuclear program continued in 1983. The average amount of radiation received by nuclear station workers in the course of their work was less than one sixth of the maximum amount permitted under Atomic Energy Control Board regulations.

In 1983, Hydro's nuclear operating staff took considerable pride in working more than 10 million hours with a very low conventional accident rate of less than two lost-time accidents per million employee-hours and no incidence of whole-body radiation exposure beyond regulatory limits. This has extended Ontario Hydro's nuclear operations record to 21 years without a conventional occupational fatality or a radiation incident that resulted in any form of acute radiation injury to employees or the public. At the same time, there were no radioactive air or water emissions of any consequence to the public.

The Corporation's diligence in assuring the safety of its employees and the public was reflected in the handling of the pressure tube failure at Pickering on August 1. The quick and competent response of control room operators in shutting down the unit 2 reactor meant that the automatic shutdown systems did not have to be used. There was no release of radiation, no injury and no damage to the reactor. The staff's response attests to the high calibre of Hydro's nuclear operator training program.

In 1983, Hydro continued its intensive program of monitoring radiation levels in the area around nuclear sites. About 12,000 environmental measurements confirmed that radioactive emissions were typically less than 1 per cent of the maximum permitted by the Atomic Energy Control Board.

A new structure to meet new needs

Ontario Hydro's corporate strategy for the 1980s is to serve better the interests of energy users across the province. One way to do this is to develop wiser and wider uses for electricity.

Achieving this goal means strengthening customer relationships with municipal utilities, and direct industrial and rural customers.

Hydro created separate Regions and Marketing Branches in March to focus attention on customer needs – both traditional needs for reliable and reasonably priced electricity, and emerging needs for new and more energy efficient applications for electricity.

Part of the mandate of the Regions Branch is to serve Hydro's rural customers. Major priorities for the new branch are to be responsive to customer needs while implementing productivity improvements and delivery of marketing programs.

One of the challenges facing any corporation which has made cost cutting an important goal is to maintain high standards of service. In 1983, the Regions Branch was able to reduce – without negative impact on service – some of the resources which serve rural customers. Hydro's Niagara Region was phased out and its responsibilities absorbed by the neighbouring Western and Central Regions. This reduces expenditures by about $4 million per year.

Maximizing benefits to customers

The new Marketing Branch provides reorganizational support for new customer-oriented initiatives and programs. The Branch consists of Customer Service, Market Development, New Business Ventures, and Marketing Operations Divisions.

Ontario Hydro's marketing initiatives have several objectives. Specifically, they are:

1) to encourage the efficient use of energy across the province;
2) to encourage the use of electricity where it will maximize the benefits to customers;
3) to develop the kind of electrical loads which will allow customers to get the most economic use out of Ontario's electrical utility systems;
4) to assist provincial and national programs in reducing Canada's dependence on oil.

Assessing customer needs

Over the years, Ontario Hydro has developed a high level of customer confidence not only as a reliable supplier of energy, but also as a source of energy information. The Residential Energy Advisory Program (REAP) has been a significant achievement in this direction. Hydro and participating municipal utilities have conducted thousands of surveys which have given homeowners valuable information on improving the energy efficiency of their homes.

Providing customers with information is only one side of the story. With the new Marketing Operations Division, which was formed in October, Hydro is placing an increasing emphasis on listening to customer needs.

Much of the initial activity of this division is getting to know what customers want. Analysis of the major market areas (residential, commercial, agricultural, and industrial) allows Hydro to develop market programs that support the strategy of wiser and wider use of electricity. A number of new customer needs have been identified, and marketing initiatives have been put into place.

In the industrial sector, work is underway to evaluate the market potential for electricity in industry. Case studies were completed during the year for customers in the abrasives, mining, metal melting, and pulp and paper industries. These studies concentrated on key applications such as heat treating, metal melting, and steam raising.

Tapping steam generating capacity at the Bruce Nuclear Power Development can offer Ontario industries an economic and reliable long-term source of industrial steam energy. The Bruce Energy Centre Development Corporation has been established to develop and market that potential. The assets of that Corporation were purchased by Ontario Hydro in June and funds were approved by the provincial government for the building of the steam delivery system to the Centre. Engineering of the steam delivery lines is in progress and a marketing plan is underway.

Better uses for electricity

Hydro continued to develop industrial applications for electrical energy. Solid state metering for in-plant energy measurements is providing our industrial customers with the means to improve the efficiency of their electricity use. Ontario Hydro's research activities have also developed Canadian standards for high-efficiency electric motors.

The philosophy underlying the Corporation's marketing efforts in the industrial sector is the recognition that low rates and high-efficiency electrical applications enable Ontario's industries to become more competitive.

In the residential sector, among the options available to customers are various dual heating systems. One of Hydro's "talking furnace" advertisements told customers how an electric plenum heater installed in an oil furnace could cut oil consumption and reduce heating bills.

Ontario Hydro continued to lend support and develop work on the super energy-efficient home.

Financial support to customers for conversions was identified as a need. Loans were made available to area and utility customers so they could spread their net conversion costs over a period of time on their electricity bills.

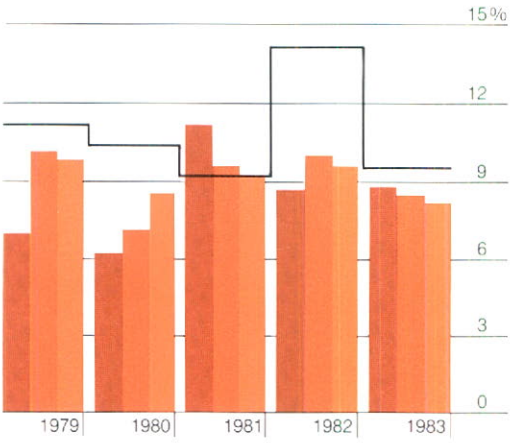
In 1983, activities in commercial and agricultural markets were focused on retrofitting buildings such as schools, offices, municipal and other government facilities, as well as hotels and motels. The Marketing Branch is now seeking opportunities for electrical energy in farming operations, new buildings, nursing homes, and multi-residence high-rise buildings.

Rates

The past decade has seen the cost of most forms of energy escalate rapidly. However, the average wholesale cost of electricity produced by Ontario Hydro since 1979 has actually declined by 2.2 per cent in real dollar terms.

In October, Hydro's Board of Directors approved an average rate increase of 7.8 per cent for 1984 – 8.0 per cent for the municipal utility group, 7.6 per cent for the direct customer group, and a net 7.5 per cent for the rural retail system. The rural rate increase takes into account $45 million in assistance provided by all electricity consumers in the province to reduce the electric bills of year-round rural residential customers. The level of this assistance in 1983 was $35 million. (In 1981, legislation was passed to reduce the difference between bills paid by the rural and urban residents to 15 per cent, based on a monthly consumption of 1,000 kilowatt-hours.)

Excluding local utility costs, Hydro's 1984 wholesale rate will mean an increase of less than $3.00 on the typical monthly bill of a municipal utility residential customer. A typical rural customer will pay an increase of $3.42 on his monthly bill.



— **Canadian Utility Average***
(Based on weighted average of yearly kilowatt-hour sales)
*Preliminary for 1983

Ontario Hydro
- Rural
- Direct
- Municipal

Rate Increases Comparison with Canadian Utilities
Percent Annual Rate Change

There are a number of factors which affect the 1984 rate increase. The major one is the cost associated with bringing new nuclear generating capacity into service. While this puts upward pressure on rate increases over the short term, in the long term a real decline in electricity rates is forecast. Over the life of the station, the low fuelling costs of a nuclear station compared to coal more than offset the higher capital costs.

Another contributing factor is the increased cost of fuel, labour, and materials used in operating our facilities. Hydro is subject to the same inflationary trends that exist elsewhere. Consequently, these costs must be recovered through electricity rates.

Starting in 1984, there may be some periods when there is nuclear generating capacity surplus to system needs. Since nuclear plants have low operating costs, Hydro can make this nuclear energy available to Ontario customers under certain conditions at attractive rates.

Consequently, Hydro has introduced new rate classes on an experimental basis – intermittent and monthly blended. Although the rates for these new classes are lower than Hydro's firm power rates, they recover more than our incremental costs (such as fuel) and also make a contribution towards Hydro's fixed costs. The new classes were available beginning on April 1, 1984.

Monthly Residential Electric Bills*
1 000 kW.h JANUARY 1984

New York	176
Boston	134
Charlottetown	117
Detroit	109
Chicago	108
Tampa	91
Dallas	88
Birmingham	83
Los Angeles	83
Washington D.C.	76
Little Rock	76
Atlanta	73
Louisville	66
St. Louis	65
Halifax	65
St. John's	65
Tennessee Valley Authority	59
Fredericton	57
Ontario – Rural	54
Portland, Oregon	53
Calgary	50
Vancouver	48
Ontario – Municipal Electric Utility Average	47
Regina	41
Montreal	39
Winnipeg	34

*Expressed in Canadian dollars

Customer service

Electricity users in Ontario expect a high degree of service and reliability. The completion of major generating projects and transmission lines in the 1980s will help meet that expectation.

In the meantime, Hydro has continued to work with customers to improve the range of services satisfying customer needs.

An important development benefitting rural customers is a new tingle voltage filter. After two years of research and testing, Hydro's Customer Service and Research Divisions developed a filter which prevents tingle or stray voltage – caused by electrical equipment failure or improper grounding – from entering a farmer's livestock buildings.

Although not a widespread problem, tingle voltage may cause loss of milk production or reduced growth in livestock on affected farms. Hydro's solution has proven so effective and economical that other utilities have expressed an interest in developing similar devices.

The year 1983 also saw initiatives in parallel generation. Ontario Hydro and the provincial government encourage the private generation of electricity. Hydro is developing a general policy on the purchase of electricity from private generating sources. Provided that technical criteria for a safe interconnection with the provincial power grid are met, Ontario Hydro guarantees that it will buy electricity from private energy producers.

As Ontario Hydro's corporate strategy for the 1980s is implemented, emphasis within the Corporation has begun to shift from engineering and construction activities to service and marketing efforts.

This corporate realignment has resulted in a general reduction in the number of employees in response to declining workload in many parts of the organization. More than two-thirds of those employees whose jobs had been phased out during the past year and a half found, or were seeking, other positions within the Corporation by the end of 1983.

Attention is being focused on preparing the people of Hydro to deal with the organization's changing direction. This means matching the skills and experience of surplus employees with the jobs becoming available through normal attrition as well as corporate realignment.

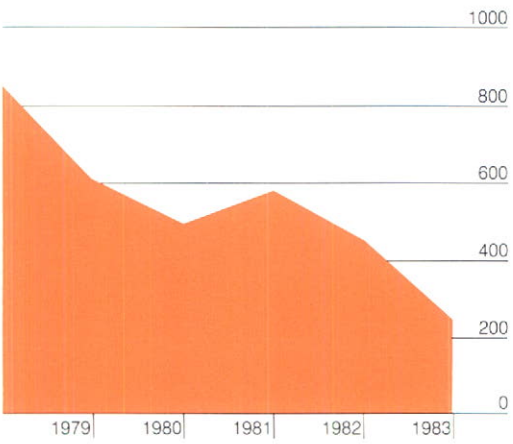
As construction activities decline over the next several years, there will be a corresponding reduction in design and construction staff. At the same time, the increased emphasis on customer service will open up a number of opportunities.

In 1983, a special program that encouraged long-service employees to retire early without any significant financial disadvantage resulted in approximately 1,300 early retirements. This, in turn, created openings for surplus staff and other employees.

By the end of the year, Hydro employed 23,376 regular staff, a decrease of 1,870 from 1982.

The issue of surplus staff was also one of the primary concerns in the negotiations between the Corporation and its professional and supervisory staff. These negotiations produced an agreement that provides for more flexible placement of surplus employees.

Like all provincially regulated organizations, Ontario Hydro had to abide by the Inflation Restraint Act, 1982, which limited pay increases to 5 per cent during 1983.



Time Lost for Work Related Injuries
Days Lost per Million Employee Hours

Hydro's employees made their own contribution to restraint. Most staff took vacation time or leave without pay over the Christmas holiday period, which allowed Hydro to shut down all but essential services.

Hydro continued to lend full support to the Ontario Human Rights Code. A human rights training program familiarized supervisory staff with the code and its application in the workplace. In addition, two policies on illegal discriminatory practices and sexual harassment were widely publicized throughout the Corporation during the year.

The Corporation continued to devote attention to its Equal Opportunity Program. The objective of the program is to ensure that women have the same access to training and career advancement as men do, resulting in increased opportunities in executive, management, professional, technical, and trades jobs.

Health and safety

Employee and management achievements in occupational health and safety were impressive in 1983.

For the first time in more than 30 years, the staff worked an entire year without an on-the-job fatality. The time lost for work-related injuries dropped to 40 per cent of the previous five-year average, the lowest rate ever achieved.

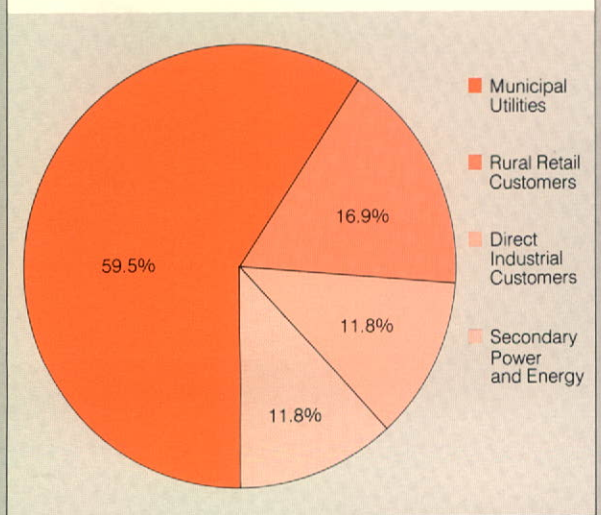
Although within the realm of statistical variation, these results followed increased attention paid by managers and employees to the control of electrical contact and falling accidents – the predominant cause of fatal accidents among electrical utilities.

Hydro began a surveillance study of disease and mortality rates among all current and former employees involved in forestry since 1948. The results of this multi-year study should provide Hydro and other health officials with valuable data on the possible effects of chemical sprays that have been used in clearing rights of way. The use of herbicides does not, as far as is known, present a risk to either employees or the public. But Hydro is seeking further confirmation through this study that the spraying of herbicides is as safe as evidence to date suggests.

Financial Review

Ontario Hydro's revenues in 1983 totalled $3,805 million. Primary sales of electricity to customers in Ontario amounted to $3,357 million, while secondary sales mainly to United States utilities totalled $448 million in 1983. Primary revenues increased 13.1% or $388 million over 1982 due to an 8.4% increase in power rates and a 4.7% increase in the volume of sales. The average increase in rates for municipal utilities was 8.2%, while the average rate increases for direct industrial customers and rural retail customers were 8.5% and 8.8%, respectively. The 1983 sales volume to municipal utilities, rural retail and direct industrial customers increased 5.2%, 3.1% and 6.8%, respectively, mainly due to weather related factors and economic recovery in 1983. Secondary revenues increased 7.1% or $30 million largely due to a 10.3% increase in sales volume, partially offset by lower prices resulting from lower world oil prices and a highly competitive export market.

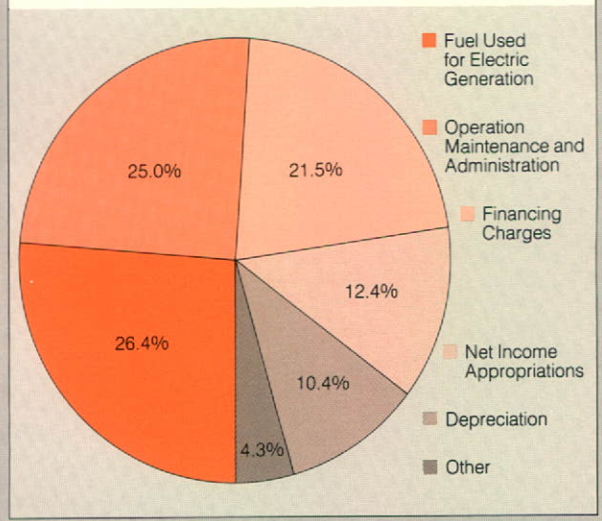
Source of Revenues in 1983
Total Revenues
$3,805,131,000



Ontario Hydro's total operating costs in 1983 amounted to $3,333 million compared to $3,039 million in 1982, an increase of 9.7%. Costs increased largely as a consequence of escalating prices for fossil fuels, and increased costs of labour, materials and purchased services.

Energy related costs comprised primarily of fuel and purchased power increased 6.9% over 1982. Electric energy generated by nuclear stations supplied 32% of total energy to the system in 1983. Hydraulic stations supplied 31% and higher cost fossil-fueled generation provided 30%. Purchases of power from interconnected utilities provided the remaining 7% of energy supplied to the system in 1983. The cost of fuel used for electric generation from all sources totalled $1,006 million in 1983, an increase of $104 million or 11.6% over 1982. This increase was primarily due to the higher cost of fossil-fueled generation and the increased volume of energy generated in 1983. Purchases of power in 1983 amounted to $127 million, a decrease of $1 million over 1982. Payments to Atomic Energy of Canada Limited and the Province of Ontario, as required under the nuclear payback agreement, totalled $37 million in 1983, a decrease of $28 million from 1982. These payments decreased primarily because of the shut-down of Pickering units 1 and 2 as a consequence of the pressure tube failure in unit 2 on August 1, 1983.

Application of Revenues in 1983
Total Revenues
$3,805,131,000



During 1983, costs associated with the operation, maintenance and administration of Ontario Hydro's in-service facilities amounted to $952 million. The increase of $98 million or 11.5% over 1982 was mainly due to the costs associated with a special retirement allowance program and escalation in labour and other costs, partially offset by an overall reduction in the level of operating and maintenance activities. As part of the effort to reduce staff levels, Ontario Hydro initiated, during 1983, a special retirement allowance program. Under this program, lump sum payments totalling $53 million were made to approximately 1,300 long service employees who elected to take early retirement.

Depreciation costs charged to operations totalled $395 million in 1983, an increase of $48 million or 13.7% over 1982. This increase resulted primarily from additional facilities being placed in service, including Pickering Nuclear Generating Station unit 5. In addition, commencing in 1983, depreciation costs included a provision of $19 million for the future removal of fuel channels in the first four units at the Pickering Nuclear Generating Station and the first three units at the Bruce Nuclear Generating Station.

Interest and foreign exchange costs charged to operations totalled $816 million in 1983, $73 million or 9.9% higher than 1982. These higher financing costs resulted from an $88 million increase in interest costs charged to operations, partially offset by a $15 million decrease in foreign exchange costs during the year. The increase in interest costs primarily resulted from financ-

ing costs associated with Pickering unit 5 being charged to operations in 1983 upon the unit being placed in service. The decrease in foreign exchange costs reflected the lower level of the Corporation's foreign debt repayable within one year, partially offset by the higher level of redemptions of foreign debt during 1983.

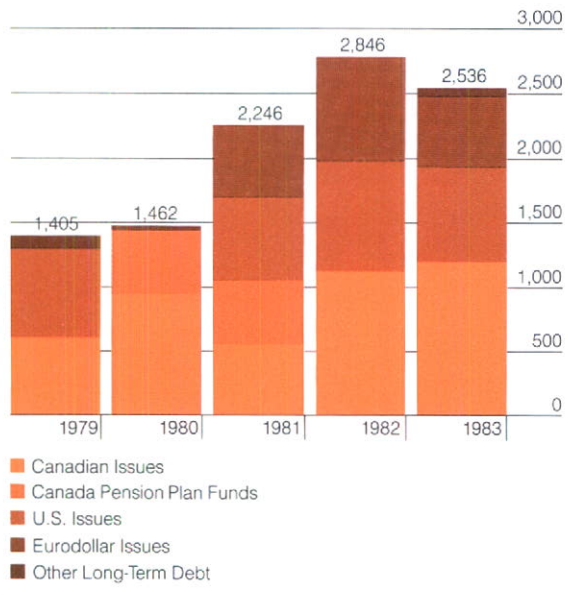
Net income for 1983 was $472 million, $123 million higher than in 1982. As required by the Power Corporation Act, $185 million of net income was appropriated for debt retirement purposes in 1983. The remaining $287 million balance of 1983 net income was appropriated to the Reserve for the Stabilization of Rates and Contingencies. The resulting improvements in the interest coverage and debt ratio indicators of Ontario Hydro's financial soundness are:

Financial Indicators	1983	1982
Interest Coverage	1.24	1.20
Debt Ratio	.840	.845

The funds required by Ontario Hydro to finance the construction of fixed assets were provided from two major sources, operations and long-term debt financing. In 1983, funds from operations provided $912 million of Hydro's total requirements, while $1,929 million was provided by long-term debt financing. Compared to 1982, these amounts were $131 million higher and $286 million lower, respectively.

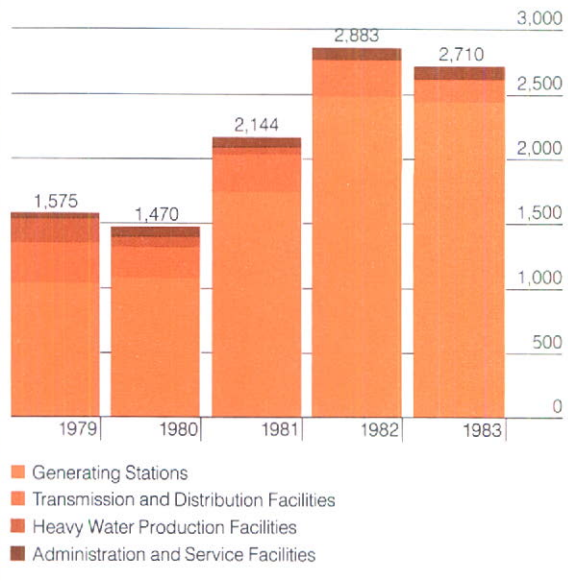
Bonds, notes and other long-term debt issued by Ontario Hydro during 1983 totalled $2,536 million. Canadian bonds and notes of $1,200 million were issued during 1983. In addition, United States bonds and notes of U.S. $603 million (Cdn. $739 million) and Eurodollar bonds of U.S. $450 million (Cdn. $551 million) were issued, and an 80 million Swiss franc bond issue (Cdn. $46 million) was refinanced. The average coupon interest rate for long-term debt issued in 1983 was 10.9% compared to 14.6% in 1982. Maturing long-term debt amounted to $426 million in 1983 compared to $403 million in 1982. In addition, during 1983, an amount of $182 million of debt was redeemed early compared to $228 million in 1982.

Long-Term Debt Issued
$ Millions



Net additions to fixed assets were $2,710 million during 1983. Major capital expenditures were $2,437 million for generation facilities including $325 million for heavy water, $192 million for transmission and distribution facilities, and $81 million for administration and service facilities. Net additions were $173 million lower than those in 1982, the result of decreased expenditures of $50 million on generation facilities, $99 million on transmission and distribution facilities, and $24 million on administration and service facilities. The expenditures on major generation projects under construction during 1983 and 1982 were:

Net Additions to Fixed Assets
$ Millions



	1983	1982
	$ millions	
Nuclear Generation		
Bruce "B"	753	850
Pickering "B"	368	467
Darlington	698	381
Fossil Generation		
Atikokan	167	178

During 1983, unit 5 at the Pickering Nuclear Generating Station was placed in service at a cost of $1,123 million including $159 million for heavy water.

Summary of Significant Accounting Policies

The accompanying financial statements have been prepared by management in accordance with generally accepted accounting principles in Canada which have been applied on a basis consistent with that of the preceding year. In management's opinion, the financial statements have been properly prepared within reasonable limits of materiality and in the light of information available up to March 12, 1984. To assist the reader in understanding the financial statements, the Corporation's significant accounting policies are summarized below:

Rate-setting

Ontario Hydro has broad powers to generate, supply and deliver electric power throughout the Province of Ontario. The Corporation operates under the Power Corporation Act and is subject to provisions of the Ontario Energy Board Act.

Under the provisions of the Power Corporation Act, the price payable by customers for power is the cost of supplying the power. Such cost is defined in the Act to include the cost of operating and maintaining the system, depreciation, interest, and the amounts appropriated for debt retirement and stabilization of rates and contingencies. The debt retirement appropriation is the amount required under the Act to accumulate in 40 years a sum equal to the debt incurred for the cost of the fixed assets in service. The appropriation for, or withdrawal from, the stabilization of rates and contingencies reserve is an amount established to maintain a sound financial position and to stabilize the effect of cost fluctuations.

Under the provisions of the Ontario Energy Board Act, a public hearing before the Ontario Energy Board is required in respect of any changes in electricity rates proposed by Ontario Hydro which affect its municipal utilities, direct industrial customers, or, if the Minister of Energy so directs, rural retail customers. The Ontario Energy Board submits its recommendations to the Minister of Energy. After considering the recommendations of the Ontario Energy Board, the Board of Directors of Ontario Hydro under the authority of the Power Corporation Act establishes the electricity rates to be charged to customers. If the Board of Directors specifies a certain cost or gain is to be included in future electricity rates, that would otherwise be charged or credited to operations in the current year, then this cost or gain is deferred and amortized to future operations on a basis consistent with its inclusion in rates.

Fixed assets

Fixed assets are capitalized at cost which is comprised of material, labour and engineering costs, as well as overheads, depreciation on service equipment and interest applicable to capital construction activities. In the case of generation facilities, cost also includes the net cost of commissioning, and for nuclear generation, the cost of heavy water. The net cost of commissioning is the cost of start-up less the value attributed to energy produced by generation facilities during their commissioning period. The cost of heavy water is comprised of the direct cost of production, and applicable overheads, as well as interest and depreciation on the heavy water production facilities. Leases which transfer the benefits and risks of ownership of assets to Ontario Hydro are capitalized.

Interest is capitalized on construction in progress at rates (1983 – 14.0% and 1982 – 13.9%) which approximate the average cost of long-term funds borrowed in the years in which expenditures have been made for fixed assets under construction. If the construction period of a project is extended and the construction activities are continued, interest is capitalized during the period of extension provided that the project has a reasonable expectation of completion.

If a project is cancelled, or deferred indefinitely with a low probability of construction being resumed in the future, all costs, including the costs of cancellation, are written off to operations.

If fixed assets are mothballed for future use, the costs of mothballing are charged to operations.

Depreciation

The capital costs of fixed assets in service are depreciated on a straight-line basis. Depreciation rates for the various classes of assets are based on their estimated service lives, which are subject to periodic review. Changes in service life estimates are implemented on a remaining service life basis from the year the change can be first reflected in electricity rates. Major components of generating stations are depreciated over the lesser of the service life expectancy of the component or the remaining service life of the associated generating station.

The estimated service lives of assets in the major classes are:

Generating stations	
– hydraulic	– 65 to 100 years
– fossil	– 25 to 35 years
– nuclear	– 40 years
Heavy water	– over the period ending in the year 2040
Transmission and distribution	– 20 to 55 years
Administration and service	– 5 to 60 years
Heavy water production facilities	– 11 to 20 years

In accordance with group depreciation practices, for normal retirements the cost of fixed assets retired is charged to accumulated depreciation with no gain or loss being reflected in operations. However, gains and losses on sales of fixed assets, and losses on premature retirements are charged to operations in the year incurred as adjustments to depreciation expense.

When the net costs of removal on retirement of fixed assets can be reasonably estimated and are significant, the amounts are amortized to operations on an annuity basis over the remaining service life of the fixed assets. Other net removal costs are charged to operations as incurred. Net removal costs amortized to operations include the estimated costs of decommissioning nuclear stations and, commencing in 1983, the estimated costs of removing certain nuclear reactor fuel channels. Estimates of net removal costs, interest rates, and the amortization periods are subject to periodic review. Changes in estimated costs are implemented on a remaining service life basis from the year the changes can be first reflected in electricity rates.

Fixed assets removed from operation and mothballed for future use are amortized so that any estimated loss in value is charged to operations on a straight-line basis over their non-operating period.

Unamortized advances for fuel supplies

As part of its program to ensure the adequate supply of fuels for its generating stations, Ontario Hydro has entered into long-term fuel supply contracts. Where these contracts require Ontario Hydro to make payments for pre-production costs to suppliers in advance of product delivery, these payments and associated costs, including interest, are carried in the accounts as unamortized advances for fuel supplies. The advances are amortized to fuel inventory as the fuels are delivered.

Fuel for electric generation

Fuel used for electric generation is comprised of the average inventory costs of fuel consumed, charges for commissioning energy produced, and provisions for disposal of nuclear fuel irradiated during the period. The inventory cost of fuel consumed is comprised of fuel purchases, transportation and handling costs, and the amortization of advances for fuel supplies. Transportation costs include charges for interest and depreciation on railway equipment owned by Ontario Hydro. The charges for commissioning energy produced during the period represent the incremental operating and fuel costs of producing the same quantity of energy at generating units displaced because of the commissioning activity. The costs for disposal of nuclear fuel irradiated in each period are charged to operations based on estimated future expenditures and interest accumulating to the estimated date of disposal. Estimates of expenditures, interest rates, and the date of disposal are subject to periodic review. Adjustments resulting from changes in estimates are amortized to operations on an annuity basis over the period from the year the changes can be first reflected in electricity rates to the estimated in-service date of the disposal facility.

Unamortized debt discount

Debt discounts or premiums arising on the issuance of debt are amortized over the period to maturity of the debt. In addition, redemption discounts or premiums on debt acquired prior to the date of maturity are amortized over the period from the acquisition date to the original maturity date of the debt.

Nuclear agreement – Pickering units 1 and 2

Ontario Hydro, Atomic Energy of Canada Limited and the Province of Ontario are parties to a joint undertaking for the construction and operation of units 1 and 2 of Pickering Nuclear Generating Station, with ownership of these units being vested in Ontario Hydro. Contributions to the capital cost by Atomic Energy of Canada Limited and the Province of Ontario amounted to $258 million and these have been deducted in arriving at the value of fixed assets in service in respect of Pickering units 1 and 2. Ontario Hydro is required to make monthly payments until the year 2001 to each of the parties in proportion to their capital contributions. These payments, termed "payback", represent in a broad sense the net operational advantage of having the power generated by Pickering units 1 and 2 as compared with coal-fired units similar to Lambton units 1 and 2.

Foreign currency translation

Long-term debt payable in foreign currencies is translated to Canadian currency at rates of exchange at the time of issue. Current monetary assets and liabilities, including long-term debt payable within one year, are translated to Canadian currency at year-end rates of exchange and the resulting gains or losses, together with realized exchange gains or losses, are credited or charged to operations.

Pension plan

The pension plan is a contributory, defined benefit plan covering all regular employees of Ontario Hydro. Pension costs, as actuarially determined, include current service costs and amounts required to amortize any surpluses or unfunded liabilities. Commencing January 1, 1983, if there is a net surplus in the fund, it is amortized over five years or if there is a net unfunded liability arising from past service obligations it is amortized over fifteen years. Prior to 1983, surpluses and unfunded liabilities were amortized individually over fifteen years.

Research and development

Research and development costs are charged to operations in the year incurred, except for those related directly to the design or construction of a specific capital facility.

Statement of Operations

for the year ended December 31, 1983

	1983	1982
	$'000	$'000
Revenues		
Primary power and energy		
Municipal utilities	**2,265,308**	1,997,752
Rural retail customers	**643,395**	575,784
Direct industrial customers	**448,007**	395,250
	3,356,710	2,968,786
Secondary power and energy (note 1)	**448,421**	418,844
	3,805,131	3,387,630
Costs		
Operation, maintenance and administration	**951,818**	853,569
Fuel used for electric generation	**1,006,306**	902,089
Power purchased	**126,420**	127,519
Nuclear agreement – payback	**37,311**	65,334
Depreciation (note 2)	**395,438**	347,779
	2,517,293	2,296,290
Income before financing charges	**1,287,838**	1,091,340
Interest (note 3)	**760,364**	672,503
Foreign exchange (note 4)	**55,823**	70,418
	816,187	742,921
Net income	**471,651**	348,419
Appropriation for:		
Debt retirement as required by the Power Corporation Act	**185,030**	168,015
Stabilization of rates and contingencies	**286,621**	180,404
	471,651	348,419

See accompanying summary of significant accounting policies and notes to financial statements.

Statement of Financial Position

as at December 31, 1983

Assets	1983	1982
	$'000	$'000
Fixed assets		
Fixed assets in service (note 5)	**14,655,203**	13,073,735
Less accumulated depreciation	**3,606,410**	3,186,729
	11,048,793	9,887,006
Construction in progress (note 5)	**8,898,965**	7,712,599
	19,947,758	17,599,605
Current assets		
Cash and short-term investments (note 6)	**357,529**	452,200
Accounts receivable	**471,199**	364,277
Fuel for electric generation (note 7)	**759,360**	801,842
Materials and supplies, at cost	**191,122**	199,489
	1,779,210	1,817,808
Other assets		
Unamortized advances for fuel supplies (note 8)	**894,065**	758,823
Unamortized deferred costs (note 9)	**398,370**	394,793
Unamortized debt discount	**80,123**	58,893
Long-term accounts receivable and other assets	**94,368**	90,910
	1,466,926	1,303,419
	23,193,894	20,720,832

See accompanying summary of significant accounting policies and notes to financial statements.

Liabilities	1983	1982
	$'000	$'000
Long-term debt		
Bonds and notes payable (note 10)	**18,017,388**	16,089,328
Other long-term debt (note 11)	**222,920**	241,159
	18,240,308	16,330,487
Less payable within one year	**263,105**	448,537
	17,977,203	15,881,950
Current liabilities		
Accounts payable and accrued charges	**525,324**	562,223
Short-term notes payable	**26,270**	112,949
Accrued interest	**579,290**	521,094
Long-term debt payable within one year	**263,105**	448,537
	1,393,989	1,644,803
Other liabilities		
Long-term accounts payable and accrued charges	**166,086**	80,753
Accrued irradiated fuel disposal and fixed asset removal costs (note 12)	**147,648**	75,644
	313,734	156,397
Contingencies (notes 5 and 13)		
Equity		
Equities accumulated through debt retirement appropriations	**2,156,280**	1,971,458
Reserve for stabilization of rates and contingencies	**1,225,993**	939,529
Contributions from the Province of Ontario as assistance for rural construction	**126,695**	126,695
	3,508,968	3,037,682
	23,193,894	20,720,832

On behalf of the Board

Milan Nastich
Chairman

Vice-Chairman

Toronto, Canada,
March 12, 1984.

Statement of Equities Accumulated through Debt Retirement Appropriations

for the year ended December 31, 1983

	Municipal Utilities	Power District (Rural Retail and Direct Industrial Customers)	Totals	
			1983	1982
	$'000	$'000	**$'000**	$'000
Balances at beginning of year	1,381,573	589,885	**1,971,458**	1,803,662
Debt retirement appropriation	126,369	58,661	**185,030**	168,015
Transfers and refunds on annexations by municipal utilities	1,853	(2,061)	**(208)**	(219)
Balances at end of year	1,509,795	646,485	**2,156,280**	1,971,458

Statement of Reserve for Stabilization of Rates and Contingencies

for the year ended December 31, 1983

	Held for the benefit of all customers	Held for the benefit of (or recoverable from) certain groups of customers			Totals	
		Municipal Utilities	Rural Retail Customers	Direct Industrial Customers	**1983**	1982
	$'000	$'000	$'000	$'000	**$'000**	$'000
Balances at beginning of year	948,127	1,144	(9,565)	(177)	**939,529**	759,296
Appropriation	288,843	136	(1,494)	(864)	**286,621**	180,404
Transfers and recoveries on annexations by municipal utilities	(78)	—	57	—	**(21)**	(44)
Payment to Ontario Municipal Electric Association (note 14)	—	(136)	—	—	**(136)**	(127)
Balances at end of year	1,236,892	1,144	(11,002)	(1,041)	**1,225,993**	939,529

See accompanying summary of significant accounting policies and notes to financial statements.

Statement of Changes in Financial Position

for the year ended December 31, 1983

	1983	1982
	$'000	$'000
Source of funds		
Operations		
Net income	**471,651**	348,419
Charges not requiring funds in the current year:		
Depreciation	**395,438**	347,779
Provision for irradiated fuel disposal costs	**40,450**	56,708
Other	**4,716**	28,225
	912,255	781,131
Financing		
Long-term debt		
Bonds and notes payable and other long-term debt issued	**2,536,490**	2,845,624
Less retirements	**607,872**	631,490
	1,928,618	2,214,134
Short-term notes payable – (decrease) increase	**(86,679)**	15,749
Cash and short-term investments – decrease (increase)	**94,671**	(43,759)
	1,936,610	2,186,124
Accounts payable and accrued interest – increase	**21,297**	207,386
Long-term accounts payable and accrued charges – increase	**85,333**	14,267
Fuel, materials and supplies – decrease (increase)	**53,222**	(160,203)
	3,008,717	3,028,705
Application of funds		
Net additions to fixed assets (note 15)	**2,709,542**	2,883,039
Unamortized advances for fuel supplies – increase	**135,242**	161,999
Accounts receivable and other assets – increase (decrease)	**163,933**	(16,333)
	3,008,717	3,028,705

See accompanying summary of significant accounting policies and notes to financial statements.

1. Secondary power and energy

Secondary power and energy is comprised mainly of revenues of $447 million in 1983 (1982 – $418 million) from sales of electricity to United States utilities.

2. Depreciation

	1983	1982
	$'000	$'000
Depreciation of fixed assets in service	477,979	452,189
Amortization of deferred costs	16,723	15,508
Amortization of net removal costs	31,000	14,000
Other net removal costs	8,634	7,508
	534,336	489,205
Less:		
Depreciation charged to – heavy water production	110,892	108,754
– construction in progress	25,446	23,733
– fuel for electric generation	2,373	2,387
Gain on sales of fixed assets	187	6,552
	138,898	141,426
	395,438	347,779

Depreciation of fixed assets in service includes $26 million (1982 – $15 million) for the amortization of non-operating generating units which have been mothballed. (See note 5.)

3. Interest

	1983	1982
	$'000	$'000
Interest on bonds, notes, and other debt	1,999,763	1,702,607
Interest on accrued irradiated fuel disposal and fixed asset removal costs	12,245	4,936
	2,012,008	1,707,543
Less:		
Interest charged to – construction in progress	966,345	758,622
– heavy water production	123,869	127,042
– unamortized advances for fuel supplies	68,799	53,792
– fuel for electric generation	34,796	28,116
Interest earned on investments	57,835	67,468
	1,251,644	1,035,040
	760,364	672,503

4. Foreign exchange

	1983	1982
	$'000	$'000
Exchange loss on redemption and translation of foreign long-term debt	54,204	66,317
Net exchange loss on other foreign transactions	1,619	4,101
	55,823	70,418

5. Fixed assets

	1983		
	$'000		
	Assets in Service	Accumulated Depreciation	Construction in Progress
Generating stations – hydraulic	**1,776,229**	**482,715**	**41,885**
– fossil	**2,833,986**	**894,816**	**546,357**
– nuclear	**3,021,025**	**437,289**	**6,695,329**
Heavy water	**752,534**	**96,576**	**1,302,056**
Transmission and distribution	**4,153,281**	**1,000,971**	**251,300**
Administration and service	**757,821**	**306,895**	**58,662**
Heavy water production facilities	**1,360,327**	**387,148**	**3,376**
	14,655,203	**3,606,410**	**8,898,965**

	1982		
	$'000		
	Assets in Service	Accumulated Depreciation	Construction in Progress
Generating stations – hydraulic	1,755,915	452,953	26,404
– fossil	2,797,302	804,473	392,697
– nuclear	1,950,220	366,665	5,878,047
Heavy water	594,007	85,984	1,028,890
Transmission and distribution	3,953,425	932,118	297,825
Administration and service	667,011	268,271	65,384
Heavy water production facilities	1,355,855	276,265	23,352
	13,073,735	3,186,729	7,712,599

On August 1, 1983, the unit 2 reactor at the Pickering Nuclear Generating Station was shut down when heavy water began leaking from the heat transport system. The leak was traced to a cracked pressure tube. As part of an investigation, the Pickering unit 1 reactor, the "sister" of unit 2, was shut down on November 14, 1983, for inspection and metallurgical testing of a sample of its reactor pressure tubes. On March 12, 1984, Ontario Hydro's Board of Directors decided to replace the pressure tubes in units 1 and 2 prior to restarting these units. Retubing of the two units is expected to be completed by 1987. Electricity demand for both primary and secondary customers will be met by Ontario Hydro's other sources of generation.

An initial assessment of the financial implications arising from the pressure tube failure and the retubing has been completed. Preliminary indications of the impact on the capital construction program and operations are that for the period 1984 to 1992, capital costs, excluding interest capitalized, are expected to increase approximately $200 million (1984 dollars) and revenue requirements are expected to increase approximately $280 million (1984 dollars) over amounts previously forecast for this period.

Eight units (1982 – five units) at the R. L. Hearn Generating Station, four units (1982 – four units) at the Lennox Generating Station and two units at the J. C. Keith Generating Station are mothballed. The capital cost and accumulated depreciation of these non-operating fossil-fueled units, amounting to $701 million and $276 million, respectively (1982 – $562 million and $162 million, respectively), are included in fixed assets in service. At this time it is uncertain if, or when, these units will resume operation.

The remaining two units at the J. C. Keith Generating Station, one unit at the Thunder Bay Generating Station, and Bruce Heavy Water Plant "A" are expected to be mothballed in 1984. The capital costs and accumulated depreciation of these facilities, amounting to $305 million and $248 million, respectively, are included in fixed assets in service.

(Note 5 continued)

5. Fixed assets (continued)

Construction in progress at December 31, 1983 is comprised of:

	Remaining Number of Units Scheduled	Planned In-Service Dates	Dependable Capacity to be Placed in Service	Costs Incurred to December 31, 1983	Estimated Costs to Complete (Excluding Escalation and Interest)
			MW	$ millions	$ millions
Nuclear generating stations (including heavy water)					
Pickering "B"	3	1984-85	1,548	2,234	140
Bruce "B"	4	1985-87	3,124	4,057	830
Darlington	4	1988-92	3,524	1,477	4,360
Fossil generating station					
Atikokan	1	1984	206	531	60
All other construction in progress	—	—	—	600	—
				8,899	

The above estimates are the most recent forecasts. These estimates exclude cost escalation and interest which are forecast to average 7.8% and 12.8% per year, respectively, over the period 1984 to 1992. Because of the uncertainties associated with long construction lead times and planned in-service dates, these costs to complete are subject to change.

6. Cash and short-term investments	**1983**	1982
	$'000	$'000
Cash and interest bearing deposits with banks and trust companies	**329,297**	431,459
Corporate notes	**5,000**	5,278
Government and government-guaranteed securities	**23,232**	15,463
	357,529	452,200

Corporate notes were recorded at cost which approximates market value. Government and government-guaranteed securities were recorded at the lower of cost or market value; market value as at December 31, 1983 was $23 million (1982 – $17 million).

7. Fuel for electric generation	1983	1982
	$'000	$'000
Inventories – coal	**462,296**	590,268
– uranium	**293,992**	200,177
– oil	**3,072**	11,397
	759,360	801,842

8. Unamortized advances for fuel supplies	1983	1982
	$'000	$'000
Coal	**94,499**	113,010
Uranium	**799,566**	645,813
	894,065	758,823

Based on present commitments, additional advance payments for fuel supplies will total approximately $57 million over the next five years, including approximately $12 million in 1984.

9. Unamortized deferred costs	1983	1982
	$'000	$'000
Bruce Heavy Water Plant "D"	**352,470**	353,393
Wesleyville Generating Station	**45,900**	41,400
	398,370	394,793

Bruce Heavy Water Plant "D"
Bruce Heavy Water Plant "D" is an indefinitely deferred project with a low probability of construction being resumed in the future. The Board of Directors has specified that the capital cost of this project be amortized at an annual rate of 4% in 1983, and the unamortized cost as at January 1, 1984 be amortized for recovery through rates at an annual rate of 10% over the period 1984 to 1993.

Wesleyville Generating Station
The value of the remaining assets of the Wesleyville Generating Station project has been reduced by $46 million. The Board of Directors has specified that this cost be amortized for recovery through rates at an annual rate of 10% over the period 1984 to 1993.

10. Bonds and notes payable

Bonds and notes payable, expressed in Canadian dollars, are summarized by years of maturity and by the currency in which they are payable in the following table:

Years of Maturity	1983 Principal Outstanding $'000			1983 Weighted Average Coupon Rate	1982 Principal Outstanding $'000	1982 Weighted Average Coupon Rate
	Canadian	Foreign	**Total**		Total	
1983	—	—	**—**		428,647	
1984	99,278	143,641	**242,919**		210,974	
1985	485,100	291,722	**776,822**		855,095	
1986	150,000	146,989	**296,989**		145,982	
1987	717,957	199,911	**917,868**		920,698	
1988	849,262	285,927	**1,135,189**		—	
1 – 5 years	2,301,597	1,068,190	**3,369,787**	11.2%	2,561,396	10.8%
6 – 10 years	550,940	3,189,775	**3,740,715**	12.6	2,809,698	12.9
11 – 15 years	989,113	399,353	**1,388,466**	8.2	1,043,321	8.1
16 – 20 years	2,515,622	568,673	**3,084,295**	11.9	3,102,444	11.3
21 – 25 years	1,581,405	1,933,108	**3,514,513**	9.7	2,715,613	9.5
26 – 30 years	1,286,240	1,633,372	**2,919,612**	12.8	3,856,856	11.5
	9,224,917	8,792,471	**18,017,388**	11.3	16,089,328	11.0
Currency in which payable:						
Canadian dollars			**9,224,917**		8,314,524	
United States dollars			**8,669,928**		7,653,712	
West German Deutsche marks			**50,993**		64,368	
Swiss francs			**71,550**		56,724	
			18,017,388		16,089,328	

Bonds and notes payable in United States dollars include $5,792 million (1982 – $5,108 million) of Ontario Hydro bonds held by the Province of Ontario and having terms identical with Province of Ontario issues sold in the United States on behalf of Ontario Hydro. All bonds and notes payable are either held, or guaranteed as to principal and interest, by the Province of Ontario.

Bonds and notes payable in foreign currencies are translated into Canadian currency at rates of exchange at time of issue. If translated at year-end rates of exchange, the total amount of these liabilities would have to be increased by $925 million at December 31, 1983 (1982 – $848 million).

11. Other long-term debt

	1983	1982
	$'000	$'000
The balance due to Atomic Energy of Canada Limited for the purchase of Bruce Heavy Water Plant "A". Under the purchase agreement, Ontario Hydro pays equal monthly instalments of blended principal and interest to December 28, 1992, with interest at the rate of 7.795%.	**163,666**	175,835
Capitalized lease obligation for the head office building at 700 University Avenue, Toronto. The lease obligation is for the 30-year period ending September 30, 2005, payable in United States dollars at an effective interest rate of 8%.	**40,666**	41,310
Capitalized lease obligations for transport and service equipment. Under these agreements, monthly instalments of principal and interest will be paid to 1988, at effective interest rates ranging from 6.8% to 12%.	**18,588**	24,014
	222,920	241,159

Payments required on the above debt, excluding interest, will total $100 million over the next five years. The amount payable within one year is $20 million (1982 – $20 million).

12. Accrued irradiated fuel disposal and fixed asset removal costs

	1983	1982
	$'000	$'000
Accrued irradiated fuel disposal costs	**110,229**	60,669
Accrued fixed asset removal costs	**37,419**	14,975
	147,648	75,644

Irradiated fuel disposal costs

Studies have been carried out to estimate the costs to be incurred for the disposal of irradiated nuclear fuel. The significant asssumptions used in estimating the future irradiated fuel disposal costs were:

- an in-service date of the year 2000 for irradiated nuclear fuel disposal facilities;
- a transportation distance of 1,600 kilometres from nuclear generating facilities to disposal facilities; and
- interest and escalation rates through to the disposal date averaging 13.1% and 9.2% (1982 – 9.2% and 7.3%), respectively.

Because of the uncertainties associated with the technology of disposal and the above factors, these costs are subject to change.

Fixed asset removal costs

Studies have been carried out to estimate the costs of decommissioning nuclear generating stations after the end of their service lives, and also the costs of removing certain fuel channels expected to be replaced during their service lives. The significant assumptions used in estimating decommissioning costs were:

- decommissioning on the deferred dismantlement basis (dismantlement following storage with surveillance for a 30 year period after shutdown of the reactors);
- a transportation distance of 1,600 kilometres from nuclear generating facilities to disposal facilities; and
- interest and escalation rates through to the completion of decommissioning averaging 11.0% and 8.5% (1982 – 8.0% and 6.6%), respectively.

The significant assumptions used in estimating the fuel channel removal costs were:

- removal of fuel channels in Pickering NGS "A" units 1 to 4 and Bruce NGS "A" units 1 to 3 in the 1994 to 2006 period; and
- interest and escalation rates through to 2006 averaging 13.2% and 8.3%, respectively.

Because of the uncertainties associated with the technology of decommissioning and fuel channel removal, and the above factors, these costs are subject to change. As a consequence of the Pickering unit 2 pressure tube failure, the timing and costs of removal of fuel channels in Pickering units 1 and 2 are being revised (see note 5). The impact of these changes will not be included in costs until the changes can be reflected in rates in 1985.

13. Fuel used for electric generation

Ontario Hydro contracted with Petrosar Limited for the purchase of 20,000 barrels of residual fuel oil per day through to April 1992. Deliveries for the years 1981 and 1982 were 6% and 2%, respectively, of the contract quantities. No deliveries were taken during 1983. Amounts have been charged to the costs of operations in prior years to provide for settlement with respect to reduced deliveries up to and including 1982. Ontario Hydro advised Petrosar Limited on May 24, 1983 that the contract is at an end due to Petrosar's prior undertaking to the Government of Canada to limit its production of residual fuel oil to an amount less than the contracted quantities. Petrosar has commenced actions claiming damages of $45.5 million and $59.9 million for failure to take the contract quantities in 1981 and 1982, respectively. Ontario Hydro has counterclaimed for $39.4 million paid to Petrosar Limited in 1980, 1981 and 1982 and an accounting for the difference between market and contract prices for residual fuel oil supplied since the date of such undertaking. The result of these actions and counterclaims and the rights of Petrosar Limited under the contract are not determinable.

14. Payment to Ontario Municipal Electric Association

The amount of this payment is equivalent to interest on the balance held for the benefit of Municipal Utilities in the Reserve for Stabilization of Rates and Contingencies.

15. Net additions to fixed assets

Net additions to fixed assets are capital construction expenditures less the proceeds on sales of fixed assets. The proceeds on sales of fixed assets in 1983 and 1982 were insignificant. For 1984, net additions to fixed assets are estimated to be approximately $2,700 million.

16. Pension plan

The most recent actuarial valuation of Ontario Hydro's pension plan as at December 31, 1982 reported a surplus of approximately $16 million (December 31, 1981 – $28 million).

The significant actuarial assumptions used in the 1982 valuation (1981 valuation) were:

- rate used to discount future investment income 8.5% (1981 – 8.5%) and future benefits 8% (1981 – 8%);
- salary escalation rate 8% (1981 – 8%);
- average retirement age for males 61.2 (1981 – 61.4) and for females 60.7 (1981 – 61.3); and
- common stocks valuation 5 year average (1981 – 5 year average).

Additional unfunded liabilities of approximately $54 million for plan improvements, partially offset by the experience surplus for 1982 of approximately $42 million, decreased the pension plan surplus by $12 million.

The pension plan costs for 1983 were $73 million (1982 – $70 million).

17. Research and development

In 1983, approximately $58 million of research and development costs were charged to operations and $4 million were capitalized (1982 – $61 million and $5 million, respectively).

Auditors' Report

To the Minister of Energy and to the Board of Directors of Ontario Hydro:

We have examined the statement of financial position of Ontario Hydro as at December 31, 1983 and the statements of operations, equities accumulated through debt retirement appropriations, reserve for stabilization of rates and contingencies and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of Ontario Hydro as at December 31, 1983 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Canada,
March 12, 1984.

CLARKSON GORDON
Chartered Accountants

Five Year Summary of Financial Statistics

	1983	1982	1981	1980	1979
		(in thousands of dollars)			
Revenues					
Primary power and energy					
Municipal utilities	**2,265,308**	1,997,752	1,800,129	1,603,072	1,441,557
Rural retail customers	**643,395**	575,784	545,760	513,616	474,795
Direct industrial customers	**448,007**	395,250	391,038	341,785	305,210
	3,356,710	2,968,786	2,736,927	2,458,473	2,221,562
Secondary power and energy	**448,421**	418,844	424,581	360,742	346,558
	3,805,131	3,387,630	3,161,508	2,819,215	2,568,120
Costs					
Operation, maintenance and administration	**951,818**	853,569	764,712	639,572	601,422
Fuel used for electric generation	**1,006,306**	902,089	765,429	674,085	608,615
Depreciation	**395,438**	347,779	324,596	305,967	284,610
Other	**163,731**	192,853	190,720	148,528	151,651
	2,517,293	2,296,290	2,045,457	1,768,152	1,646,298
Income before financing charges and extraordinary item	**1,287,838**	1,091,340	1,116,051	1,051,063	921,822
Financing charges					
Gross interest	**2,012,008**	1,707,543	1,369,933	1,165,921	1,029,568
Capitalized interest	**(1,193,809)**	(967,572)	(627,758)	(401,254)	(341,073)
Investment income	**(57,835)**	(67,468)	(84,685)	(109,268)	(105,163)
	760,364	672,503	657,490	655,399	583,332
Foreign exchange	**55,823**	70,418	51,743	19,238	70,875
	816,187	742,921	709,233	674,637	654,207
Income before extraordinary item	**471,651**	348,419	406,818	376,426	267,615
Extraordinary item	**—**	—	—	160,000	—
Net income	**471,651**	348,419	406,818	216,426	267,615
		(in thousands of dollars)			
Financial position					
Total assets	**23,193,894**	20,720,832	17,829,621	15,593,347	14,513,729
Fixed assets	**19,947,758**	17,599,605	15,447,525	13,630,177	12,628,842
Long-term debt	**17,977,203**	15,881,950	13,662,582	12,005,058	11,134,185
Equity	**3,508,968**	3,037,682	2,689,653	2,284,277	2,069,538
		(in thousands of dollars)			
Major sources of funds					
Operations	**912,255**	781,131	751,019	692,377	582,424
Bonds and notes payable and other long-term debt – net increase	**1,928,618**	2,214,134	1,716,204	862,249	1,098,025
Major application of funds					
Net additions to fixed assets	**2,709,542**	2,883,039	2,144,210	1,469,550	1,574,716
Unamortized advances for fuel supplies – net increase	**135,242**	161,999	182,719	146,722	126,680
Financial indicators					
Interest coverage[3]	**1.24**	1.20	1.30	1.32	1.26
Debt ratio[4]	**.840**	.845	.841	.846	.848
Return on average rate base (%)[5]	**12.0**	11.4	11.3	10.8	10.1

	1983	1982	1981	1980	1979
		(in cents per kilowatt-hour of total energy sales)			
Average revenue[1]					
Primary power and energy					
Municipal utilities	**3.210**	2.981	2.710	2.470	2.276
Rural retail customers	**5.027**	4.475	4.269	3.970	3.649
Direct industrial customers	**2.740**	2.614	2.290	2.080	1.937
Secondary power and energy	**3.768**	3.895	3.838	3.363	2.972
All classifications combined	**3.409**	3.203	2.945	2.685	2.475
		(expressed as a %)			
Average rate increases					
Municipal utilities	**8.2**	9.6	9.3	8.6	9.8
Rural retail customers	**8.8**	8.7	11.2	6.2	7.0
Direct industrial customers	**8.5**	10.0	9.6	7.1	10.1
		(in cents per kilowatt-hour of energy generated)			
Average cost[1][2]					
Hydraulic					
Operation, maintenance and administration	**.159**	.173	.149	.109	.098
Fuel – water rentals	**.077**	.073	.066	.058	.052
Depreciation and financing charges	**.348**	.360	.351	.324	.326
	.584	.606	.566	.491	.476
Nuclear					
Operation, maintenance and administration	**.491**	.487	.411	.349	.332
Fuel – uranium	**.357**	.384	.232	.239	.194
Depreciation and financing charges	**1.026**	.883	.807	.765	.926
	1.874	1.754	1.450	1.353	1.452
Fossil					
Operation, maintenance and administration	**.368**	.402	.374	.342	.327
Fuel – coal, gas and oil	**2.417**	2.328	2.097	1.856	1.708
Depreciation and financing charges	**.669**	.683	.611	.645	.715
	3.454	3.413	3.082	2.843	2.750

Footnotes

(1) Figures for 1983 are preliminary.

(2) Average cost per kilowatt-hour represents the costs attributable to generation but excludes the costs related to transmission, distribution and corporate administrative activities. These figures reflect the historical accounting costs of operating facilities and the actual energy generated by these facilities during the year.

(3) Interest coverage represents income before extraordinary item plus interest on bonds, notes, and other debt divided by interest on bonds, notes, and other debt.

(4) Debt ratio represents debt (bonds and notes payable, short-term notes payable, other long-term debt, and accrued irradiated fuel disposal and fixed asset removal costs) divided by debt plus equity.

(5) Return on average rate base represents income before extraordinary item plus gross interest divided by average rate base (total assets less long-term and current accounts payable and accrued charges, accrued interest, and contributions from the Province of Ontario as assistance for rural construction).

Comparative Statistics

	1983	1982	1981	1980	1979
Customer statistics[1]		(in millions of kilowatt-hours)			
Primary energy sales					
Municipal utilities	**70,579**	67,019	66,416	64,899	63,349
Rural retail	**12,798**	12,867	12,783	12,936	13,011
Direct industrial	**16,330**	15,119	17,077	16,432	15,757
	99,707	95,005	96,276	94,267	92,117
Secondary energy sales	**11,900**	10,753	11,063	10,727	11,662
		(in thousands)			
Total Ontario customers:					
Residential	**2,597**	2,559	2,528	2,493	2,449
Farm	**108**	110	110	112	113
Commercial and industrial	**343**	335	329	322	316
	3,048	3,004	2,967	2,927	2,878
		(in kilowatt-hours per customer)			
Average annual use:					
Residential	**10,200**	9,976	9,852	9,821	9,839
Farm	**21,389**	21,135	20,731	19,978	19,225
Commercial and industrial	**200,200**	194,376	204,575	202,582	204,113
		(in cents per kilowatt-hour)			
Average revenue:					
Residential	**4.67**	4.34	3.96	3.60	3.22
Farm	**4.87**	4.50	4.11	3.74	3.42
Commercial and industrial	**3.52**	3.28	2.92	2.66	2.35
Operating statistics					
Dependable peak capacity ('000 kW)[2]	**25,269**	24,906	24,595	24,457	24,429
December primary peak demand ('000 kW)	**18,792**	16,872	16,600	16,808	16,365
Primary energy made available ('000,000 kW•h)	**106,071**	100,836	101,659	100,174	98,127
Total Staff, average for year	**31,233**	32,654	30,850	28,902	28,385

Footnotes

(1) Figures for 1983 are preliminary.

(2) Includes mothballed generation: 1983 – 3,783,200 kW; 1982 – 3,034,200 kW; 1981 – 1,913,000 kW; 1980 – 1,704,000 kW; and 1979 – 550,000 kW.

Ontario Hydro

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Willowdale M2M 3T7

Eastern Region
P. J. (Phil) Garlough
420 Dundas Street East
Belleville K8N 5C3

Georgian Bay Region
F. A. (Al) Perttula
93 Bell Farm Road
Barrie L4M 1H1

****Niagara Region**
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Box 157, 1053 Main Street West
Hamilton L8N 3B9

Northeastern Region
C. G. (Gord) Sanford
590 Graham Drive
North Bay P1B 8L4

Northwestern Region
J. D. (Jack) Hamer
34 Cumberland Street North
Thunder Bay P7A 4L5

Western Region
Dr. David A. Drinkwalter
1075 Wellington Road
London N6E 1M1

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*Retired March 31, 1983
**Appointed Chairman April 1, 1983
***Closed June 30, 1983 and responsibilities assumed by Central and Western Regions

Ontario Hydro
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ISSN 0382-2826/Printed in Canada